

# SEQUENTIAL REGRESSION METHODS FOR OPTIMAL STOPPING

M. Ludkovski, University of California Santa Barbara, USA, ludkovski@pstat.ucsb.edu

We propose a new *sequential* Monte Carlo algorithm for computing Snell envelopes that improves the original approach of Longstaff and Schwartz. Our method employs Active Learning to adaptively refine the stochastic mesh so as to focus on correct classification of the stopping region. Moreover, the use of sequential regression can quantify the uncertainty in approximating the stopping boundaries, providing online guidelines on the amount of computational effort needed. Numerical experiments benchmarking the performance of the proposed algorithm vis-a-vis existing approaches will be presented.

Joint work with R. Gramacy.